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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HARRISON, CHANTE E

ART UNIT PAPER NUMBER

2628

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/647,112

Applicant(s)

JOHANSEN ET AL.

Examiner

Chante Harrison

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-23-06

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the following communication: Amendment filed on 2/3/06. ***This action is made FINAL.***

2. Claims 2-16 are pending in this application. Claim 16 is an independent claim. Claims 2-14 have been amended. Claim 1 has been cancelled. Claim 16 is newly added.

Specification

1. The objection to the abstract is withdrawn.

2. The objection of the specification for failing to provide proper antecedent basis for claimed subject matter, is withdrawn, based upon claim amendments.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 2-12 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Shires, US 5,111,313, 5/1992.

As per independent claim 16, Shires discloses a surface (Fig. 1 "11") adapted to be moved through a light beam (Fig. 1 "20 & 21"), the light beam including a spectrum of different wavelengths (i.e. modulated light from the laser diode is diffracted) (col. 3, ll. 19-24; col. 4, ll. 43-56) and illuminating a part of the surface moving through the light beam (col. 3, ll. 25-30), wherein the surface comprises a diffractive or holographic optical element (DOE) (i.e. HOE) (Fig. 1 "10") adapted to separate a substantial part of the light beam illuminating the part of the surface into different wavelengths (i.e. the incident light beam is diffracted inside the HOE) (col. 3, ll. 40-43) and to direct the separated wavelengths toward a predetermined area (i.e. light beam 20 is directed toward both area 11 and area 13, which are inside of HOE 10) (Fig. 1), the separated wavelengths being directed by said DOE towards different parts of the predetermined area (i.e. each rotation of the HOE/DOE causes the light beam to fall on a different part/track of the HRS "11" which illuminates a different part of the HDSS, e.g. selective hologram surface, "13") (Fig. 1 "11"; col. 3, ll. 55-67) and the directions of the separated

wavelengths being dependent on the part of the DOE surface being illuminated (i.e. each rotation of the DOE/HOE causes diffraction of the light beam at a different predefined angle) (col. 3, ll. 55-67) said DOE generating an essentially continuous repeating color pattern (e.g. Examiner interprets as a continuous spectrum) scanned over said predetermined area as a function of the DOE surface through the light beam (col. 3-4, ll. 55-10; col. 7, ll. 30-35).

As per dependent claim 2, Shires discloses the surface is positioned on a rotating part so as to provide a repeated scan of wavelengths over the predetermined area (i.e. the HOE rotates to diffract light at differing angles by sensing a pulse during a cycle that is repeated) (col. 3, ll. 55-65; col. 5, ll. 15-32).

As per dependent claim 3, Shires discloses the surface is drum shaped and being rotatable according to the drum axis (Fig. 1 "10"; col. 3, ll. 55-63).

As per dependent claim 4, Shires discloses the surface is a plane, disc shaped surface (Fig. 1 "11"; col. 3, ll. 32-35; col. 7, ll. 30-33).

As per dependent claim 5, Shires discloses the DOE is constituted by a number of focusing DOEs (Fig. 1 "11"), each for directing the separated colors to selected parts of the imaging device (col. 3, ll. 55-67).

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As per dependent claim 6, Shires discloses the focusing DOE's is at least partially overlapping (i.e. overlapping HOE, hologram optical elements) (Fig. 1 "11").

As per dependent claim 7, Shires discloses the DOE is adapted to direct both first (col. 3, ll. 55-58) and second order diffraction (col. 3, ll. 58-62) toward the imaging device (i.e. as the HOE rotates the light is diffracted differently for each rotation, and the diffracted light is illuminated on the holographic screen, HDSS), and that the DOE is provided with a smooth transition between the two when moved along the direction of movement (col. 3-4, ll. 66-2).

As per dependent claim 8, Shires discloses the DOEs are reflective (col. 5-6, ll. 65-15; Fig. 5).

As per dependent claim 9, Shires discloses the DOEs are transparent diffracting the light passing through the elements (col. 6, ll. 44-50).

As per dependent claim 10, Shires disclose the DOE is constituted by a holographic element (i.e. interpreted as a piece of holographic film) (col. 8, ll. 38-41).

As per dependent claim 11, Shires discloses the DOE is constituted by a synthetic surface hologram (i.e. Examiner interprets as a raster scanning hologram) (col. 3, ll. 31-33; col. 8, ll. 38-41; col. 7, ll. 41-50).

As per dependent claim 12, Shires discloses the DOE is provided on a flat surface being tilted or rotated relative to a chosen axis for scanning through the diffracted spectrum (col. 3, ll. 55-67).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shires as applied to claim 16 above, and further in view of William Parker et al., US 2004/0066547 A1, 4/2004.

As per dependent claim 13, Shires discloses in a video projector (i.e. computer) (col. 9, ll. 63-67), focusing means (i.e. slit aperture) for directing light toward a chosen part of the separator (col. 5, ll. 63-65), imaging device positioned within said predetermined area (i.e. mirror) (col. 5-6, ll. 66-15) and optical system for projecting the image (i.e. HOE, hologram optical element, projects the directed light to the screen) (Fig. 1 "10"). Shires fail to specifically disclose said projector comprising a lamp with a chosen spectrum.

Shires discloses diodes (fig. 1 "15") that can be modulated to produce light in the frequency range visible to humans (col. 3, ll. 18-25; col. 4, ll. 42-49).

Parker discloses a lamp with a chosen spectrum (pp. 4, Para 41).

It would have been obvious to one of skill in the art to include Parker's lamp with a chosen spectrum with the method of Shires because modulation of laser diodes to on, off and states in between correlate to the production of light at varying

wavelengths, where the use of laser diodes facilitates keeping the wavelength with the reflectance bandwidth of the HOE.

As per dependent claim 14, Shires discloses imaging device being synchronized with said color separator for providing an image corresponding to the color projected on each part of the device (col. 5, ll. 3-51), and an optical system for projecting the image (Fig. 1 "10"). The rationale as applied in the rejection of claim 13 applies herein.

As per dependent claim 15, Shires discloses the imaging device is programmed to project two images at different sets of wavelengths (col. 7-8, ll. 66-26), representing stereoscopic images (col. 8, ll. 26-27), said sets of wavelengths both corresponding to a full RGB color spectrum (col. 8, ll. 25-30), said images being viewable using two adapted filtering devices (Fig. 1 "48 & 49"), each letting one of said sets of wavelengths through (col. 6, ll. 35-61).

Response to Arguments

2. Applicant's arguments filed 2/3/06 have been fully considered but they are not persuasive.

Applicant argues Shires does not teach at least a DOE adapted to separate a spectrum of light.

In reply, Shires teaches a HOE (Fig. 1 "10"). Applicant's specification (pp. 3, ll. 1-5) acknowledges a DOE refers to both holographic and diffractive elements. Therefore, Shires disclosure of a HOE implicitly teaches a DOE. Shires also teaches laser diodes that produce light in the frequency range visible to humans (col. 3, ll. 17-20) and the HOE diffracting the light beam provided from the laser diodes (col. 3, ll. 40-45). Diffraction is a modification which light undergoes in passing through narrow slits, and in which the rays produce fringes of parallel colored bands (Merriam Webster's Online Dictionary, Tenth Edition). Therefore, in teaching diffracting a light beam in a range of frequencies visible to humans, Shires teaches separating a spectrum (i.e. a range of color formed when a beam of light is dispersed) of light.

Based upon the above provided rationale, dependent claims 12-15 are not in condition for allowance.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

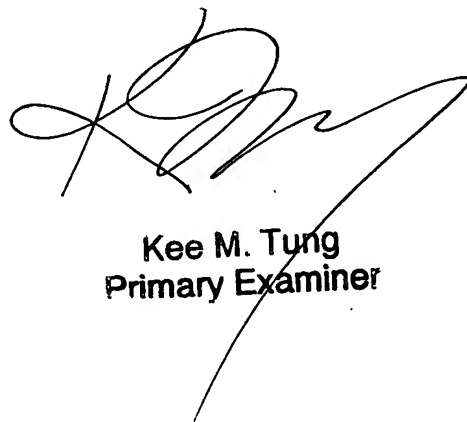
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chante Harrison whose telephone number is 571-272-7659. The examiner can normally be reached on Monday, Tuesday and Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chante Harrison
Examiner
Art Unit 2628

Ch
April 5, 2006



Kee M. Tung
Primary Examiner